

Applicants: Hamilton et al.
Serial No.: 09/560,224
Filing Date: April 28, 2000
Docket No.: ZIL-300-1P-1C

Amendments to the Drawings:

One replacement sheet containing drawing amendments is attached hereto. Please substitute the replacement sheet for figure 6 in place of the originally filed sheet 6/13. No new matter has been added; one change is made:

- (i) In FIGURE 6, the reference label δ_{2C} has been corrected to read Φ_{2C} , as described in the specification in the paragraph beginning at line 10 on page 13. Specifically, the specification states:

“ . . . In this Figure, the transmit dispersion angle θ_{TC} is equal to the total of the secondary lens upper region refraction angle θ_{2C} and the secondary lens lower region refraction angle Φ_{2C}”
(Specification, p. 13, lines 13-15)

Attachment: 1 replacement sheet

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REMARKS

Reconsideration and allowance is respectfully requested.

Before entry of this amendment, claims 16-17 and 19-29 were pending. In the Office Action, claims 16-17 and 19-29 were rejected. In the present amendment, claims 16, 20 and 22-29 are amended, and claims 30-38 are added. After entry of the amendment, claims 16-17 and 19-38 are pending.

I. Claims 16-17

Claims 16-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schairer (USP 6,301,035) (Office Action, p. 2, lines 17-18).

A. Independent claim 16

Schairer does not form the basis for a valid rejection under § 102(e) because Schairer does not disclose all of the limitations of claim 16. Specifically, Schairer does not disclose a primary lens element separated by a distance from a secondary lens element. Claim 16 as currently amended now recites:

a primary lens element providing an optical path, . . . ; and
a secondary lens element separated by a distance from said primary lens element and aligned along said optical path . . . (emphasis added)

The Examiner states, with regard to claim 16, that Schairer discloses:

“a primary lens element 16 (col. 3, lines 6-7) providing an optical path, said primary lens element 16 and said transceiver/infrared emitting/infrared detection device stack S cooperatively located such that said transceiver/infrared emitting/infrared detection device stack is aligned with said optical path

further comprising a secondary lens unit 2A (col. 3, line 7) aligned along said single optical path, the primary lens 16 located between the secondary lens 2A and the at least one infrared emitting device 10, the secondary lens unit 2A causing a ray to be refracted such that the angle of

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the ray with respect to the secondary lens is modified by passing through the lens (see fig. 1)" (Office Action, p. 3, lines 10-18).

Although Schairer discloses a lens with two segments, the two lens segments of Schairer are not separated by a distance from one another. Schairer's primary lens 16 and secondary lens 2A are two segments of a single lens 2 (Schairer, col. 4, lines 7-10). Schairer discloses two contiguous segments of the same lens. In contrast to Schairer, claim 16 recites two lens elements separated by a distance from one another.

Because Schairer does not disclose all of the elements of claim 16, reconsideration of the § 102(e) rejection and allowance of claim 16 are requested.

B. Dependent claim 17

Dependent claim 17 is rejected as being anticipated by Schairer. Claim 17 recites "a housing encapsulating said transceiver/infrared emitting/infrared detection device stack." The Examiner states that "Schairer further discloses in Figure 1, a housing 17 (col. 3, line 1) encapsulating said transceiver/infrared emitting/infrared detection device stack" (Office Action, p. 3, lines 19-20). Applicants respectfully disagree. The housing 17 of Schairer does not encapsulate the stack S. The reflector housing 17 of Schairer is a partial paraboloid and is open at the top.

Claim 17 depends from claim 16. In addition to the reason explained above, dependent claim 17 is allowable for at least the same reasons for which claim 16 is allowable. Reconsideration of the § 102(e) rejection and allowance of claim 17 are requested.

II. Claims 19-29

Claims 19-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Schairer in view of Rosenberg (US Patent No. 5,506,445) (Office Action, p.

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4, lines 9-10). To establish a *prima facie* case of obviousness, the Examiner must demonstrate three criteria. The MPEP § 2142 states:

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure 'To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.' Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)." MPEP § 2142 (emphasis added).

A. Independent claims 19 and 21

Both claims 19 and 21 recite an arrangement of optical transmitting and receiving devices. Claim 19 recites a transceiver circuit located on a first side of a circuit structure and an infrared emitting device located on a second side of the circuit structure. Claim 21 recites an optical transmission device mounted on a first side of a support element and a transceiver device mounted on a second side of the support element.

The combination of Schairer and Rosenberg does not form the basis for a valid rejection under § 103(a) for two reasons. First, the references when combined do not teach or suggest all of the claim elements. Second, there is no suggestion or motivation in either Schairer or Rosenberg to combine the teaching of one with the teachings of the other.

First, neither Schairer nor Rosenberg teaches or suggests a transceiver circuit on one side of a support element and an emitting device on the other side

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of the support element. The Examiner admits that "Schairer differs from claim 19 of the invention in that he does not specifically disclose the transceiver circuit device 6 and infrared emitting device 8 is located on different side of circuit structure 5" (Office Action, p. 5, lines 4-6). The Examiner maintains, however, that Rosenberg teaches that a transceiver 120 can be mounted to a printed circuit board in any possible position. The Examiner concludes, "it would have been obvious to an artisan at the time of the invention was made to implement the teaching of Rosenberg in the apparatus of Schairer that is design to have the transceiver circuit device 6 and infrared emitting device 8 is located on different side of circuit structure 5" (Office Action, p. 5, lines 11-14). Applicants respectfully disagree with the Examiner's interpretation of Rosenberg.

Transceiver 120 of Rosenberg is not a transceiver circuit or device as recited by claims 19 and 21. Transceiver 120 of Rosenberg includes the emitting device and the detection device. The LED is the emitting device, and the photodiode is the detection device. Rosenberg states, "transceiver 120 is formed with a first molded lens shape 121 over the LED (not shown) and a second molded lens shape 123 over the photodiode (not shown)" (Rosenberg, col. 2, lines 50-53). The transceiver circuits of claim 19 and 20 do not include an emitting device, but rather are located on the opposite side of the circuit structure from the emitting device. In Rosenberg, the LED 104, the photodiode 106 and the IC 101 are all located on the same side of the leadframe 103. The IC 101 is not located on the opposite side of the leadframe 103 from the LED 104 and the photodiode 106. The fact that the transceiver 120 of Rosenberg can be mounted on a printed circuit board in several different positions does not teach that a transceiver circuit and an emitting device within transceiver 120 are located on opposite sides of a support element within transceiver 120.

As the Examiner admits, Schairer does not teach a transceiver circuit and an infrared emitting device on different sides of a circuit structure. Rosenberg also does not teach a transceiver circuit and an infrared emitting device on different sides of a circuit structure. Therefore, the combination of Schairer and

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Rosenberg cannot teach a transceiver circuit and an infrared emitting device on different sides of a circuit structure.

Second, the Examiner points to no suggestion or motivation within Schairer or Rosenberg to combine their teachings. Schairer is concerned with an arrangement whereby a two-part system of adjacent emitters and detectors may be replaced with a single system for an emitter/detector stack. As noted by the Examiner, Schairer locates emitter and detector on the same side of a support as the integrated circuit. Rosenberg is concerned with mounting the transceiver package as a whole. The package includes adjacent emitters and detectors with respective individual optical systems. Accordingly, there would be little motivation to modify the more advanced Schairer arrangement with the less advanced two-part system of Rosenberg.

Because the combination of Schairer and Rosenberg does not disclose all of the elements of claims 19 and 21, and furthermore because there is no suggestion or motivation to combine Schairer and Rosenberg, Schairer and Rosenberg do not form the basis for a valid rejection under § 103(a). Reconsideration of the § 103(a) rejection and allowance of claims 19 and 21 is requested.

B. Dependent claim 20

Claim 20 depends from claim 19, and is allowable for at least the same reasons for which claim 19 is allowable. Reconsideration and allowance of claim 20 are requested.

C. Dependent claims 22-29

Claims 22-29 depend directly or indirectly from claim 21. Dependent claims 22-29 are allowable for at least the same reasons for which claim 21 is allowable. Reconsideration and allowance of claims 22-29 are requested.

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III. New claims 30-38

Applicants are adding new claims 30-38, each of which is supported by the specification and allowable over the cited references.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that the entire application (claims 16-17 and 19-38 are pending) is in condition for allowance. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the Examiner would like to discuss any aspect of this application, the Examiner is requested to contact the undersigned at (925) 621-2121.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By 
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Respectfully submitted,



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